Elaine McCluskey

From: Elaine McCluskey [mccluskey@fnal.gov]

Sent: Thursday, October 28, 2004 10:07 AM

To: Bill Foster; Chuck Federowicz; David Finley; Dixon Bogert; Duane Plant; Ed Crumpley; 'Erene Noyola'; fgarcia@fnal.gov; Rich Stanek; Shekar Mishra; 'Steve Geer'; Tom Lackowski; Vic Kuchler; Weiren Chou

Subject: Notes from 10/27/04 Linac Proton Driver Meeting - Civil

NEXT MEETING WILL BE 11/3/04 IN conFESSional AT 9:30 A.M.

Attendees: Fernanda Garcia, Bill Foster, Duane Plant, Dixon Bogert, Chuck Federowicz, Tom Lackowski, Rod Walton, Elaine McCluskey

Items discussed:

1. New alignment to the south, with only one arc.
    a. Discussed how this works with beam optics. BF said single arc could work, but 2 arcs are preferable for collimation.
    b. Also discussed how this works with future experiments. Far south nature of this and aiming close to D0 makes future experiments more problematic. Conclusion was to try to provide one arc to the south, then a straight section from Kautz Rd through the Main Ring berm, to inside the ring, approximately 500 ft. Finish with another arc to the north, before the linac.
    c. Another identified advantage of this revised alignment is the better location for the linac "straight ahead" dump, which wants to be inside the ring before the MR ponds. BF said will need to have Sasha give length of straight that works best closest to 500 ft, but that otherwise this seems to be best solution.
2. Site Plan – Chuck showed plan of proposed, one arc version, including roads, buildings, and most utilities.
    a. Agreement that DWS, ICW, CHW, sanitary routing shown in logical. Include sanitary to all 3 linac buildings.
    b. Need more space between road and buildings, like MI's 90 ft. This will accommodate utility pads and parking.
    c. Buildings – 3 buildings for Linac seem right, but indicate that downstream SB will be Pump Building. For transport line, assume one new SB inside MR, about the size of a MI SB (in prior report, known as Debuncher Building).
    d. Discussed power.
        i. With loads from Cezary, 0.5 MW machine requires 5-6 MW power, and 2 MW machine only about 1 MW more. BF thought this seems wrong, that RF power should triple in upgrade. Total amount of power may impact how many feeders to pull.
        ii. With loads given by Cezary, and added 0.5MW for mechanical/electrical house loads, could use MSS existing Booster feeder 41 and existing Linac feeder 40 for machine and conventional power, using existing feeder 46A/B for cryo (46B is from MSS).
        iii. If from KRS, run new ductbank and create new feeders for machine and conventional power, while still using same as above for cryo (46A is from KRS).
        iv. Frog Farm is desired for not only construction power, but for backup for cryo. DB says this is in ductbank from Frog Farm to MI as backup for MI conventional. Ductbank could be run to new cryo facility from there.
        v. Conclusion: put all three (MSS feed, KRS feed, and Frog Farm feed in report to maximize redundancy. Cost seen as not too extreme.
3. Dumps
    a. Linac – assume same side distance from beamline enclosure to dump as in MI (about 28 ft). With 2 arcs, this probably lays out well.
    b. Injection – similar side distance as Linac. For costing, assume replacement of existing precast and slab extension will be required.

ITEMS FOR NEXT WEEK:
Site plan with additional arcs and dumps shown as well as possible.

Possible restaking of beamline after next meeting if alignment is accepted.

ACTION ITEMS:
Chuck will include new arc and straight section after Dixon talks with Weiren about what has to be changed. It would be much faster for Chuck if translation from optics to feet and DUSAF coordinates could happen with Dave Johnson translation. Dixon will discuss with Weiren.
Elaine and Bill will try to clarify with Cezary about power requirements for Linac RF.

NEXT MEETING WILL BE 11/03/04 IN conFESSional AT 9:30 A.M.

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